



*the dawn of a new millennium...*

# DTIC IACs

## Simulation Based Acquisition (SBA) Support

**Information  
Analysis  
Centers**

*Presented by:*

**Mr. Ronald E. Hale**

**Defense Technical Information Center**

**IAC Program Office**

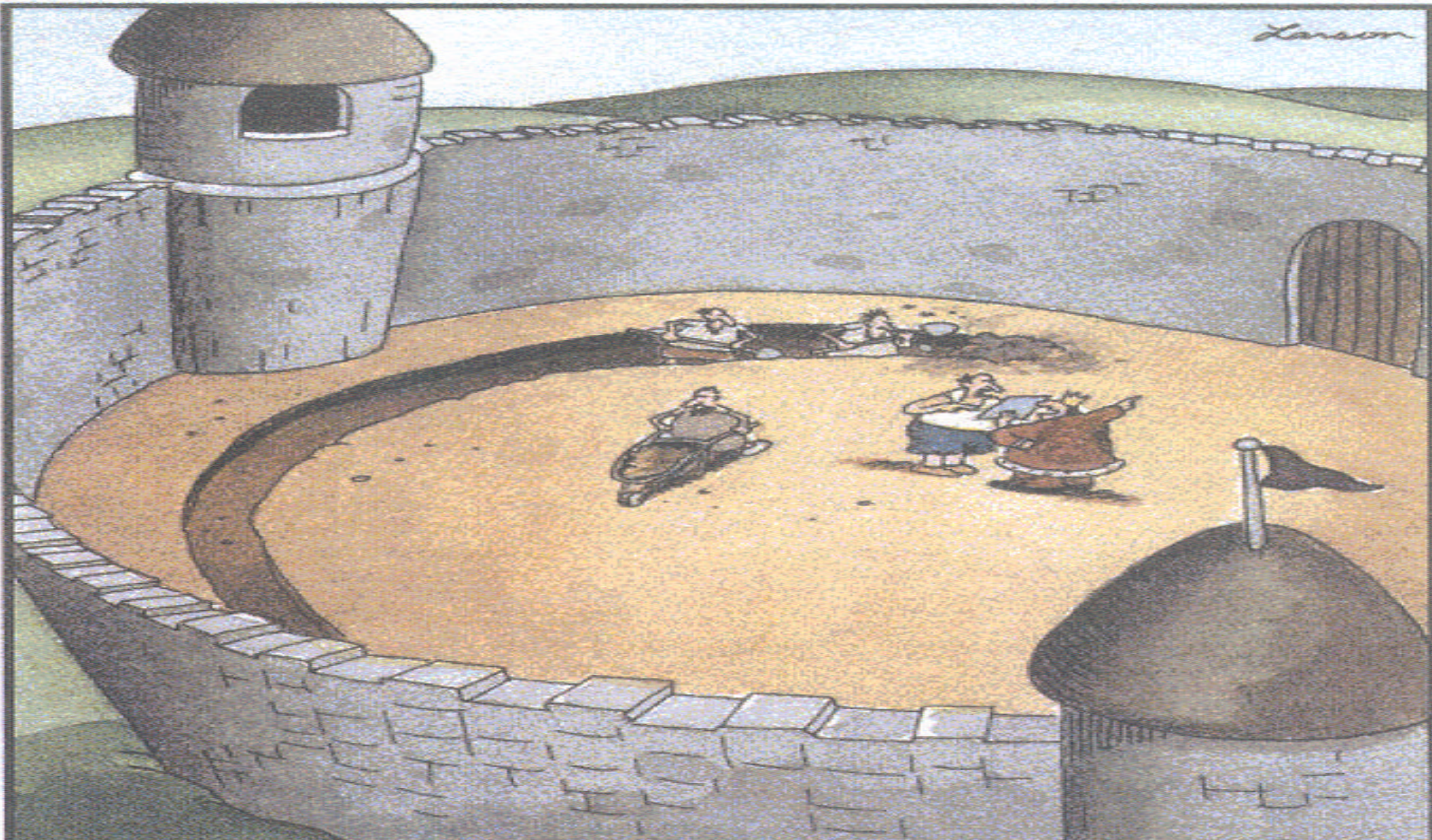
**17 May 2001**

Report Documentation Page		
<b>Report Date</b> 17052001	<b>Report Type</b> N/A	<b>Dates Covered (from... to)</b> -
<b>Title and Subtitle</b> Simulation Based Acquisition (SBA) Support	<b>Contract Number</b>	
	<b>Grant Number</b>	
	<b>Program Element Number</b>	
<b>Author(s)</b> Hale, Ronald E.	<b>Project Number</b>	
	<b>Task Number</b>	
	<b>Work Unit Number</b>	
<b>Performing Organization Name(s) and Address(es)</b> Defense Technical Information Center IAC Program Office	<b>Performing Organization Report Number</b>	
<b>Sponsoring/Monitoring Agency Name(s) and Address(es)</b> NDIA (National Defense Industrial Association 2111 Wilson Blvd., Ste. 400 Arlington, VA 22201-3061	<b>Sponsor/Monitor's Acronym(s)</b>	
	<b>Sponsor/Monitor's Report Number(s)</b>	
<b>Distribution/Availability Statement</b> Approved for public release, distribution unlimited		
<b>Supplementary Notes</b> Proceedings from 3rd Simulation Based Acquisition conference, 15-17 May 2001, sponsored by NDIA, The original document contains color images.		
<b>Abstract</b>		
<b>Subject Terms</b>		
<b>Report Classification</b> unclassified	<b>Classification of this page</b> unclassified	
<b>Classification of Abstract</b> unclassified	<b>Limitation of Abstract</b> UU	
<b>Number of Pages</b> 30		





# Looking for Scientific/ Technical Information ?







# Vision and Commitment



*To provide quality information infrastructure that permits individual use and collaborative efforts by providing authorized access to information worldwide; to maintain a central repository of Defense information; and, working together, DTIC's staff is the momentum behind DTIC's technological advances.*

*Our Commitment to You. . .*

*The **DTIC Code of Service** reflects our intention to make clear to you, our customers, the level of service you can normally expect from us. We want you to be completely satisfied with the service provided.*



# What are IACs



- **Formal organizations chartered by DoD**
- **A value-added information exchange**
- **A central source of research, development, and testing information**
- **Our analytical services can contribute to the production of affordable systems**
- **Experts covering the full spectrum of Defense Science and Technology**



# IAC Missions



- ◆ **Improve productivity of researchers, engineers, and program managers in the DoD research, development, and acquisition communities**
- ◆ **Promote standardization within specific technical areas**
- ◆ **Provide in-depth analysis services**
- ◆ **Create specialized technical information products**



# DTIC Sponsored IACs



<b>AMPTIAC</b>	<b>Advanced Materials and Processes Technology IAC</b>
<b>CBIAC</b>	<b>Chemical and Biological Defense IAC</b>
<b>CPIAC</b>	<b>Chemical Propulsion Information Agency</b>
<b>DACS</b>	<b>Data &amp; Analysis Center for Software</b>
<b>HSIAC</b>	<b>Human System IAC</b>
<b>IATAC</b>	<b>Information Assurance Technology Analysis Center</b>
<b>IRAC</b>	<b>Infrared Analysis Center</b>
<b>MSIAC</b>	<b>Modeling and Simulation IAC</b>
<b>MTIAC</b>	<b>Manufacturing Technology IAC</b>
<b>NTIAC</b>	<b>Nondestructive Testing IAC</b>
<b>RAC</b>	<b>Reliability Analysis Center</b>
<b>SURVIAC</b>	<b>Survivability/Vulnerability IAC</b>
<b>WSTIAC</b>	<b>Weapon System Technology IAC</b>



# Service-sponsored IACs



**APMIAC**  
**CEIAC**  
**CRSTIAC**  
**CTIAC**  
**DTRIAC**  
**EIAC**  
**HEIAC**  
**SAVIAC**  
**SMIAC**

**Airfields, Pavements, and Mobility IAC**  
**Coastal Engineering Defense IAC**  
**Cold Regions Science and Technology IAC**  
**Concrete Technology IAC**  
**Defense Threat Reduction IAC**  
**Environmental IAC**  
**Hydraulic Engineering IAC**  
**Shock and Vibration IAC**  
**Soil Mechanics IAC**





# IACs Support the Acquisition Life-cycle



**IACs support the acquisition  
life-cycle from concept to operations**

## **DoD 5000 Acquisition Model**





# IAC Support Throughout The Life Cycle



- ◆ **Scientific/Technical Information**
  - ◆ **Conceptual/research & Development**
  - ◆ **Successful Practices and Lessons Learned**
- ◆ **Activities**
  - ◆ **Technology Forecasts and Assessments**
  - ◆ **Concept Development 'Wargames'**
  - ◆ **Concept Analysis**
  - ◆ **Joint and Service Experiment Support**

**DoD 5000 Acquisition Model**





# IAC Support Throughout The Life Cycle



- ◆ **Scientific/Technical Information**
  - ◆ Return on Investment Information
  - ◆ Successful Practices & Lessons Learned
  - ◆ Commercial standards (e.g. factory data exchange standards, interface requirements to existing software or hardware, etc.)
- ◆ **Activities**
  - ◆ Provide Technology Forecasts & Assessments
  - ◆ Investigate commercial software (COTS) that may provide core capability for the 'to be' systems
  - ◆ Cost As an Independent Variable (CAIV) Studies
  - ◆ Provide Modeling and Simulation Support
  - ◆ Prototyping
  - ◆ Human Interaction with technology/Environment

## DoD 5000 Acquisition Model







# IAC Support Throughout The Life Cycle



- ◆ Scientific/Technical Information
  - ◆ Reliability Studies
- ◆ Activities
  - ◆ Process Analysis
  - ◆ Independent Test Support

## DoD 5000 Acquisition Model





# IAC Support Throughout The Life Cycle



- ◆ **Scientific/Technical Information**
  - ◆ **Reliability Information**
- ◆ **Activities**
  - ◆ **Support for Engineering Changes**
  - ◆ **Configuration Management**
  - ◆ **Reliability Studies**
  - ◆ **Human Systems/Environmental Studies**

## DoD 5000 Acquisition Model





# IAC Support for SBA







# Advanced Materials and Processes Technology IAC



## AMPTIAC

CBIAC  
CPIAC  
DACS  
HSIAC  
IATAC  
IRAC  
MSIAC  
MTIAC  
NTIAC  
RAC  
SURVIAC  
WSTIAC

# AMPTIAC



- ◆ MatPro Database
- ◆ Corrosion Predictive Modeling for Aging Aircraft - Critical Review & Technology Assessment
- ◆ Life Prediction and Performance Assurance of Structural Materials in Corrosive Environments

## DoD 5000 Acquisition Model





# Chemical Warfare and Chemical Biological Defense IAC



AMPTIAC

**CBIAC**

CPIAC

DACS

HSIAC

IATAC

IRAC

MSIAC

MTIAC

NTIAC

RAC

SURVIAC

WSTIAC

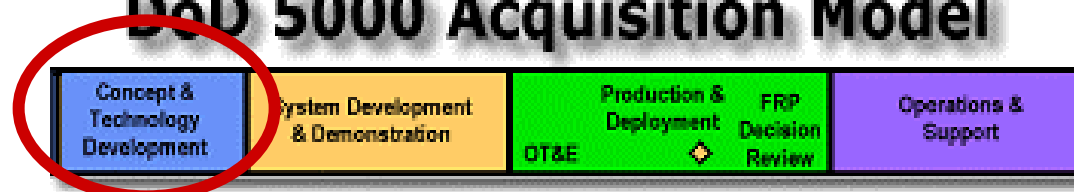


**Chemical-Biological Weapons of  
Mass Destruction:  
Understanding the Problem.**



**(Need more detail)**

## DoD 5000 Acquisition Model





# Human Systems IAC



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CPIAC  
DACS  
**HSIAC**  
IATAC  
IRAC  
MSIAC  
MTIAC  
NTIAC  
RAC  
SURVIAC  
WSTIAC

Human Systems Information Analysis Center



- Evaluation of the B-2 engine repair facility and process.
- Cost-benefit analysis for the Army's Air Warrior Program (life support gear for aviators).

(Need more detail)

## DoD 5000 Acquisition Model







# Modeling and Simulation IAC



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IRAC  
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NTIAC  
RAC  
SURVIAC  
WSTIAC



## Solutions

- Air Force Electronic Systems Command
  - Joint Synthetic Battlespace development
- Naval Air Systems Command
  - wake turbulence models for KC-135 and KC-10 aircraft.
- US Army Night Vision Lab
  - info on M&S of tactical night vision sensors.
- Joint Strike Fighter Program
  - M&S configuration management
- CIA
  - information on models that predict aspects of missile performance.

## Services

### Education

- ♦ Program Manager's Workshop
- ♦ T&E Tutorial
- ♦ Sim Support Plan Tutorial

### Planning and Assessing

- ♦ Simulation Support Plans
- ♦ IV&V

## DoD 5000 Acquisition Model

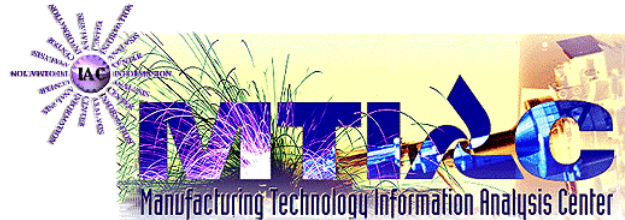




# Manufacturing Technology IAC

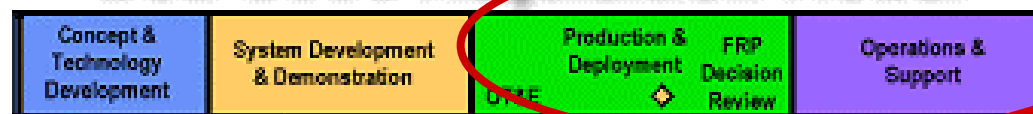


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WSTIAC



- ◆ Manufacturing Process Flow for Patriot Advanced Capability (PAC-3) missile  
-- MTIAC developed a high level model of the manufacturing process flow at Communications and Power Industries (CPI) to support the manufacture of microwave power tubes.

## DoD 5000 Acquisition Model





# Nondestructive Testing IAC



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RAC  
SURVIAC  
WSTIAC



- Conducting a Technology Assessment on computer simulation of nondestructive inspection techniques
- Developing a program plan for Probability of Detection of Nondestructive Evaluation techniques and applications

## DoD 5000 Acquisition Model







# Reliability Analysis Center



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DACS  
HSIAC  
IATAC  
IRAC  
MSIAC  
MTIAC  
NTIAC  
**RAC**  
SURVIAC  
WSTIAC

◆ Waiting for Input

**RAC**



## DoD 5000 Acquisition Model







# Survivability/Vulnerability IAC

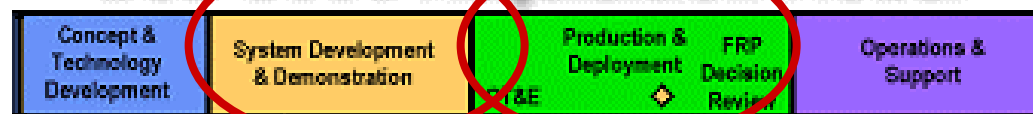


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NTIAC  
RAC  
**SURVIAC**  
WSTIAC



- **A-10 Program**
  - analysis of armor required to improve survivability for the warfighter.
- **Joint Strike Fighter**
  - computer analysis of survivability tradeoffs.
- **DOT&E Live Fire Test**
  - Front-end simulation in support of live fire testing.

## DoD 5000 Acquisition Model





# Weapon System Technology Analysis Center



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IRAC  
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NTIAC  
RAC  
SURVIAC  
**WSTIAC**



- VV&A of the Genesis BAT Area denial (modeling of performance and characteristics of minefields)
- Modeling of the SWORD Interferometer (ground-base air defense radar)
- Air and Missile Defense Experiments and joint exercises.

## DoD 5000 Acquisition Model





# Obtaining IAC Services



## Basic IAC Services

**Available at little or no cost**

## Technical Area Tasks

**Separated funded work efforts**

**Very flexible**

**Simple contracting process**



# Contact Information



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# We are the answer people



- *Providing* easy access to essential, timely information.
  - *Solving* complex problems.
  - *Reducing* duplicated efforts.
  - *Identifying* and applying best practices.
  - *Saving* you time and money.
  - *Boosting* collaboration.
  - *Delivering* innovative solutions.
- 
- We've made finding the right information, at the right time, fast and easy! See what we're doing now. Imagine what the IACs can do for you!



**Questions?**



# Backups



# Modeling and Simulation IAC



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WSTIAC



- **Planning & Employing**
  - M&S Master Plans
  - Sim Support Plans
- **VV&A – Experts, SOAR**
- **On-site liaisons**
  - Hanscom AFB
  - Norfolk
  - Orlando
  - Wright-Patterson AFB
- **Education**
  - Acquisition M&S Workshop
  - RDA Tutorial
  - T&E Tutorial





# Modeling and Simulation IAC



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WSTIAC

MODELING AND SIMULATION INFORMATION ANALYSIS CENTER

**msiac**

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HELP DESK

M&S FAQs

M&S CALENDAR

M&S NEWS

M&S JOURNAL

M&S EDUCATION

M&S LINKS

MSRR

DMSO

DTIC

## Special Interest Areas

Special Interest Areas (SIA) are a place for people interested in specific areas of M&S to exchange information.

- [Acquisition](#)
- [DoD M&S Master Plan Revision \(MSMP\)](#)
- [Experimentation](#)
- [Human and Organizational Behavior Modeling \(HOBM\)](#)
- [Impact Assessment \(IA\)](#)
- [M&S Needs](#)
- [MSRR Board of Directors](#)
- [Operations Other Than War \(OOTW\)](#)
- [Simulation Based Acquisition \(SBA\)](#)
- [Training](#)
- [Weapons of Mass Destruction \(WMD\)](#)

[www.msiac.dmsso.mil](http://www.msiac.dmsso.mil)



# Summary



## IACs provide:

- **Valued added information exchange among researchers, developers and warfighters**
- **Central source of research, development and testing information**
- **Program managers with affordable short- and long- term analytical services**
- **Access to the full spectrum of Defense S&T information**